



**PATENT**  
Atty. Docket No. FJN-063  
(3999/66)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS: Nakagawa et al.  
SERIAL NUMBER: 09/051,670 GROUP NO. 1643  
FILING DATE: September 8, 1998 EXAMINER: Romeo, D.  
TITLE: NOVEL DNA AND PROCESS FOR PRODUCING PROTEINS BY USING  
THE SAME

**STATEMENTS UNDER 37 C.F.R. §§1.821(f) and 1.181(g)**

**BOX SEQUENCE**

Assistant Commissioner for Patents and Trademarks  
Washington, D.C. 20231

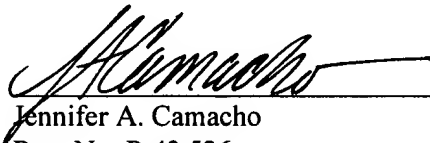
Sir:

I hereby state that the paper copy of the substitute Sequence Listing submitted herewith and the computer-readable copy of the Sequence Listing submitted herewith are the same.

In addition, I hereby state that the substitute Sequence Listing introduces no new matter in the above-identified application.

Respectfully submitted,

Date: 3/4/99

  
Jennifer A. Camacho

Reg. No. P-43,526  
Attorney for Applicants  
Testa, Hurwitz & Thibeault, LLP  
High Street Tower  
125 High Street  
Boston, Massachusetts 02110

Tel. No. (617) 248-7476  
Fax: (617) 248-7100

# SEQUENCE LISTING

<110> NAKAGAWA, Nobuaki  
YASUDA, Hisataka

<120> Novel DNA and Process for Preparing Protein Using the  
DNA

<130> FJN-063

<140> 09/051,670

<141> 1998-04-16

<150> PCT/JP97/02859

<151> 1997-08-19

<150> JP 235928/1996

<151> 1996-08-19

<160> 4

<170> PatentIn Ver. 2.0

<210> 1

<211> 1316

<212> DNA

<213> Homo sapiens

<220>

<221> exon

<222> (1173)..(1202)

<223> Encodes positions -21 to -12 of the OCIF protein

<220>

<223> Genomic DNA (human OCIF genomic DNA-1)

<400> 1

ctggagacat ataacttgaa cacttggccc tgatggggaa gcagctctgc agggactttt 60

tcagccatct gtaaacaatt tcagtggcaa cccgcgaact gtaatccatg aatgggacca 120

cactttacaa gtcatcaagt ctaacttcta gaccagggaa ttaatggggg agacagcgaa 180

ccctagagca aagtgcctaaa cttctgtcga tagcttgagg ctagtggaaa gacctcgagg 240

aggctactcc agaagttcag cgcgtaggaa gctccgatac caatagccct ttgatgatgg 300

tggggttggt gaagggaaca gtgctccgca aggttatccc tgccccaggc agtccaattt 360

tcactctgca gattctctct ggctctaact accccagata acaaggagtg aatgcagaat 420

agcacgggct ttagggccaa tcagacatta gttagaaaaa ttcctactac atggtttatg 480

taaacttgaa gatgaatgat tgcgaactcc ccgaaaaggg ctcagacaat gccatgcata 540

aagagggggcc ctgtaatttg aggtttcaga acccgaagtg aaggggtcag gcagccgggt 600  
acggcgga aa ctcacagctt tcgccagcg agaggacaaa ggtctgggac acactccaac 660  
tgcgctcgga tcttggttg atcggaactct caggggtggag gagacacaag cacagcagct 720  
gcccagcgtg tgcccagccc tcccaccgct ggtcccggct gccaggagggc tggccgctgg 780  
cgggaagggg ccgggaaacc tcagagcccc gcggagacag cagccgcctt gttcctcagc 840  
ccggtggctt ttttttcccc tgctctccca ggggacagac accaccgccc caccctcac 900  
gccccacctc cctgggggat cctttccgcc ccagccctga aagcgtaaat cctggagctt 960  
tctgcacacc ccccgaccgc tcccgcccaa gcttctctaaa aaagaaaggt gcaaagtttg 1020  
gtccaggata gaaaaatgac tgatcaaagg caggcgatac ttctgttgcc cgggacgcta 1080  
tatataacgt gatgagcgca cgggctgcgg agacgcaccg gagcgctcgc ccagccgccc 1140  
cctccaagcc cctgaggttt ccggggacca ca atg aac aag ttg ctg tgc tgc 1193  
gcg ctc gtg gtaagtcctt gggccagccg acgggtgccc ggcgcctggg 1242  
gaggctgctg ccacctgggc tcccaacctc ccagcggacc ggcggggaga aggtccact 1302  
cgctccctcc cagg 1316

<210> 2  
<211> 9898  
<212> DNA  
<213> Homo sapiens

<220>  
<221> exon  
<222> (130)..(498)  
<223> Encodes positions -11 to 112 of the OCIF protein

<220>  
<221> exon  
<222> (4503)..(4694)  
<223> Encodes positions 113 to 176 of the OCIF protein

<220>  
<221> exon  
<222> (6715)..(6939)  
<223> Encodes positions 177 to 251 of the OCIF protein

<220>  
<221> exon  
<222> (8668)..(9054)  
<223> Encodes positions 252 to 380 of the OCIF protein

<220>

<223> Genomic DNA (human OCIF genomic DNA-2)

<400> 2

gcttacttttg tgccaaatct cattaggctt aaggtaatac aggactttga gtcaaagat 60  
actgttgcac ataagaacaa acctattttc atgctaagat gatgccactg tgttcctttc 120  
tccttctag ttt ctg gac atc tcc att aag tgg acc acc cag gaa acg ttt 171  
cct cca aag tac ctt cat tat gac gaa gaa acc tct cat cag ctg ttg 219  
tgt gac aaa tgt cct cct ggt acc tac cta aaa caa cac tgt aca gca 267  
aag tgg aag acc gtg tgc gcc cct tgc cct gac cac tac tac aca gac 315  
agc tgg cac acc agt gac gag tgt cta tac tgc agc ccc gtg tgc aag 363  
gag ctg cag tac gtc aag cag gag tgc aat cgc acc cac aac cgc gtg 411  
tgc gaa tgc aag gaa ggg cgc tac ctt gag ata gag ttc tgc ttg aaa 459  
cat agg agc tgc cct cct gga ttt gga gtg gtg caa gct ggtacgtgtc 508  
aatgtgcagc aaaattaatt aggatcatgc aaagtcagat agttgtgaca gtttaggaga 568  
acacttttgt tctgatgaca ttataggata gcaaattgca aaggtaatga aacctgccag 628  
gtaggtacta tgtgtctgga gtgcttccaa aggaccattg ctgagaggaa tactttgcc 688  
ctacagggca atttaatgac aaatctcaaa tgcagcaaat tattctctca tgagatgcat 748  
gatgggtttt tttttttt ttaaagaaac aaactcaagt tgcactattg atagttgatc 808  
tatacctcta tatttcactt cagcatggac accttcaaac tgcagcactt ttgacaaac 868  
atcagaaatg ttaatttata ccaagagagt aattatgctc atattaatga gactctggag 928  
tgctaacaat aagcagttat aattaattat gtaaaaaatg agaatggtga ggggaattgc 988  
atttcattat taaaaacaag gctagttctt cctttagcat gggagctgag tgtttgggag 1048  
ggtaaggact atagcagaat ctcttcaatg agcttattct ttatcttaga caaacagat 1108  
tgtcaagcca agagcaagca cttgcctata aaccaagtgc tttctctttt gcattttgaa 1168  
cagcattggt cagggctcat gtgtattgaa tcttttaaac cagtaacca cgtttttttt 1228  
ctgccacatt tgcgaagctt cagtgcagcc tataactttt catagcttga gaaaattaag 1288  
agtatccact tacttagatg gaagaagtaa tcagtataga ttctgatgac tcagtttgaa 1348  
gcagtgtttc tcaactgaag cctgtctgat attttaagaa atatctggat tcctaggctg 1408

gactcctttt tgtgggcagc tgtcctgcgc attgtagaat tttggcagca cccctggact 1468  
ctagccacta gataccaata gcagtccttc ccccatgtga cagccaaaaa tgtcttcaga 1528  
cactgtcaaa tgtcgccagg tggcaaaatc actcctgggt gagaacaggg tcatcaatgc 1588  
taagtatctg taactatttt aactctcaaa acttgtgata tacaaagtct aaattattag 1648  
acgaccaata ctttaggttt aaaggcatatc aaatgaaaca ttcaaaaatc aaaatctatt 1708  
ctgtttctca aatagtgaat cttataaaat taatcacaga agatgcaaat tgcattcagag 1768  
tcccttaaaa ttctctctcg tatgagtatt tgaggaggga attggtgata gttcctactt 1828  
tctattggat ggtactttga gactcaaaag ctaagctaag ttgtgtgtgt gtcaggggtgc 1888  
ggggtgtgga atcccatcag ataaaagcaa atccatgtaa ttcattcagt aagttgtata 1948  
tgtagaaaaa tgaaaagtgg gctatgcagc ttggaaacta gagaattttg aaaaataatg 2008  
gaaatcaciaa ggatctttct taaataagta agaaaatctg tttgtagaat gaagcaagca 2068  
ggcagccaga agactcagaa caaaagtaca cattttactc tgtgtacact ggcagcacag 2128  
tgggatttat ttacctctcc ctccctaaaa acccacacag cggttcctct tgggaaataa 2188  
gaggtttcca gcccaaagag aaggaaagac tatgtggtgt tactctaaaa agtatttaat 2248  
aaccgttttg ttgttgctgt tgcgtgtttg aaatcagatt gtctcctctc catattttat 2308  
ttacttcatt ctgttaattc ctgtggaatt acttagagca agcatgggtga attctcaact 2368  
gtaaagccaa atttctccat cattataatt tcacattttg cctggcaggt tataattttt 2428  
atatttccac tgatagtaat aaggtaaaat cattacttag atggatagat ctttttcata 2488  
aaaagtacca tcagttatag agggaaagtca tgttcatgtt caggaaggtc attagataaa 2548  
gcttctgaat atattatgaa acattagttc tgtcattctt agattctttt tgttaaataa 2608  
ctttaaaagc taacttacct aaaagaaata tctgacacat atgaacttct cattaggatg 2668  
caggagaaga cccaagccac agatatgtat ctgaagaatg aacaagattc ttaggcccg 2728  
cacggtggct cacatctgta atctcaagag tttgagaggt caaggcgggc agatcacctg 2788  
aggtcaggag ttcaagacca gcctggccaa catgatgaaa cctgcctct actaaaaata 2848  
caaaaattag cagggcatgg tgggtcatgc ctgcaaccct agctactcag gaggctgaga 2908  
caggagaatc tcttgaacct tcgaggcgga ggttgtggtg agctgagatc cctctactgc 2968  
actccagcct gggtgacaga gatgagactc cgtccctgcc gccgcccccg ccttcccccc 3028

caaaaagatt cttcttcatg cagaacatac ggcagtcaac aaagggagac ctgggtccag 3088  
gtgtccaagt cacttatttc gagtaaatta gcaatgaaag aatgccatgg aatccctgcc 3148  
caaatacctc tgcttatgat attgtagaat ttgatataga gttgtatccc atttaaggag 3208  
taggatgtag taggaaagta ctaaaaacaa acacacaaac agaaaaccct ctttgctttg 3268  
taaggtggtt cctaagataa tgtcagtgcg atgctggaaa taatatttaa tatgtgaagg 3328  
tttttaggtg tgttttcccc tctgttctt tttttctgcc agccctttgt catttttgca 3388  
ggtcaatgaa tcatgtagaa agagacagga gatgaaacta gaaccagtcc attttgcccc 3448  
tttttttatt ttctggtttt ggtaaaagat acaatgaggt aggaggttga gatttataaa 3508  
tgaagtttaa taagtttctg tagctttgat tttctcttt catatttggt atcttgcata 3568  
agccagaatt ggctgtaaa atctacatat ggatattgaa gtctaaatct gttcaactag 3628  
cttacactag atggagatat ttcatattc agatacactg gaatgtatga tctagccatg 3688  
cgtaatatag tcaagtgttt gaaggtattt atttttaata gcgtctttag ttgtggactg 3748  
gttcaagttt ttctgccaat gatttcttca aatttatcaa atatttttcc atcatgaagt 3808  
aaaatgcct tgcagtcacc ctctctgaag ttgtaacgac tctgctgttt taaacagttt 3868  
aagcaaattg tatatcatct tccgtttact atgtagctta actgcaggct tacgcttttg 3928  
agtcagcggc caactttatt gccaccttca aaagtttatt ataatgttgt aaatttttac 3988  
ttctcaaggt tagcatactt aggagttgct tcacaattag gattcaggaa agaaagaact 4048  
tcagtaggaa ctgattggaa tttaatgatg cagcattcaa tgggtactaa tttcaaagaa 4108  
tgatattaca gcagacacac agcagttatc ttgattttct aggaataatt gtatgaagaa 4168  
tatggctgac aacacggcct tactgccact cagcggaggc tggactaatg aacaccctac 4228  
ccttctttcc tttctcttca catttcatga gcgttttgta ggtaacgaga aaattgactt 4288  
gcatttgcat tacaaggagg agaaactggc aaaggggatg atggtggaag tttgttctg 4348  
tctaataag tgaaaaatga aaatgctaga gttttgtgca acataatagt agcagtaaaa 4408  
accaagtga aagtctttcc aaaactgtgt taagagggca tctgctggga aacgatttga 4468  
ggagaaggta ctaaattgct tggatatttc cgta gga acc cca gag cga aat aca 4523  
gtt tgc aaa aga tgt cca gat ggg ttc ttc tca aat gag acg tca tct 4571  
aaa gca ccc tgt aga aaa cac aca aat tgc agt gtc ttt ggt ctc ctg 4619

B1  
Cont

cta act cag aaa gga aat gca aca cac gac aac ata tgt tcc gga aac 4667  
agt gaa tca act caa aaa tgt gga ata ggtaattaca ttccaaaata 4714  
cgtcttttgta cgatttttgta gtatcatctc tctctctgag ttgaacacaa ggctccagc 4774  
cacattcttg gtcaaactta ctttttcctt ttcttgaatc ttaaccagct aaggctactc 4834  
tcgatgcatt actgctaaag ctaccactca gaatctctca aaaactcatc ttctcacaga 4894  
taacacctca aagcttgatt ttctctctctt tcacactgaa atcaaactctt gcccataggc 4954  
aaagggcagt gtcaagtttg ccactgagat gaaattagga gagtccaaac tgtagaattc 5014  
acgttgtgtg ttattacttt cacgaatgtc tgtattatta actaaagtat atattggcaa 5074  
ctaagaagca aagtgatata aacatgatga caaattaggc caggcatggg ggcttactcc 5134  
tataatocca acattttggg gggccaaggt aggcagatca cttgaggtca ggatttcaag 5194  
accagcctga ccaacatggg gaaaccttgt ctctactaaa aatacaaaaa ttagctgggc 5254  
atggtagcag gcacttctag taccagctac tcagggctga ggcaggagaa tcgcttgaac 5314  
ccaggagatg gaggttgcag tgagctgaga ttgtaccact gcactccagt ctgggcaaca 5374  
gagcaagatt tcatcacaca cacacacaca cacacacaca cacacattag aaatgtgtac 5434  
ttggctttgt tactatggg attagtgcac ctattgcatg gaacttccaa gctactctgg 5494  
ttgtgttaag ctcttcattg ggtacaggtc actagtatta agttcagggt attcggtatgc 5554  
attccacggg agtgatgaca attcatcagg ctagtgtgtg tgttcacctt gtcactccca 5614  
ccactagact aatctcagac cttcactcaa agacacatta cactaaagat gatttgcttt 5674  
tttgtgttta atcaagcaat ggtataaacc agcttgactc tcccaaaca gtttttcgta 5734  
ctacaaagaa gtttatgaag caga'gaaatg tgaattgata tatatatgag attctaacc 5794  
agttccagca ttgtttcatt gtgtaattga aatcatagac aagccatttt agcctttgct 5854  
ttcttatcta aaaaaaaaaa aaaaaaatg aaggaagggg tattaaaagg agtgatcaaa 5914  
ttttaacatt ctctttaatt aattcatttt taattttact ttttttcatt tattgtgcac 5974  
ttactatgtg gtactgtgct atagaggctt taacatttat aaaaacactg tgaaagttgc 6034  
ttcagatgaa tataggtagt agaacggcag aactagtatt caaagccagg tctgatgaat 6094  
ccaaaaacaa acaccatta ctccatttt ctgggacata cttactctac ccagatgctc 6154  
tgggctttgt aatgcctatg taaataacat agttttatgt ttggttattt tcctatgtaa 6214

B1  
Cont.

tgtctactta tatatctgta totatctctt gctttgtttc caaaggtaaa ctatgtgtct 6274  
 aaatgtgggc aaaaaataac acactattcc aaattactgt tcaaattcct ttaagtcagt 6334  
 gataattatt tgttttgaca ttaatcatga agttccctgt gggtagtagg taaaccttta 6394  
 atagaatggt aatgtttgta ttcattataa gaatttttgg ctgttactta tttacaacaa 6454  
 tatttcactc taattagaca tttactaaac tttctcttga aaacaatgcc caaaaaagaa 6514  
 cattagaaga cacgtaagct cagttgggtct ctgccactaa gaccagccaa cagaagcttg 6574  
 attttattca aactttgcat tttagcatat tttatcttgg aaaattcaat tgtgttggtt 6634  
 ttttgttttt gtttgtattg aatagactct cagaaatcca attgttgagt aaatcttctg 6694  
 ggttttctaa cttttcttta gat gtt acc ctg tgt gag gag gca ttc ttc agg 6747  
 ttt gct gtt cct aca aag ttt acg cct aac tgg ctt agt gtc ttg gta 6795  
 gac aat ttg cct ggc acc aaa gta aac gca gag agt gta gag agg ata 6843  
 aaa cgg caa cac agc tca caa gaa cag act ttc cag ctg ctg aag tta 6891  
 tgg aaa cat caa aac aaa gac caa gat ata gtc aag aag atc atc caa 6939  
 ggtatgataa tctaaaataa aaagatcaat cagaaatcaa agacacctat ttatcataaa 6999  
 ccaggaacaa gactgcatgt atgtttagtt gtgtggatct tgtttccctg ttggaatcat 7059  
 tgttggaactg aaaaagtttc cacctgataa tgtagatgtg attccacaaa cagttataca 7119  
 aggttttggt ctccccctg ctccccagtt tccttgtaaa gtatgttgaa cactctaaga 7179  
 gaagagaaat gcatttgaag gcagggctgt atctcagga gtcgcttcca gatcccttaa 7239  
 cgcttctgta agcagccctc ctgaccacc aaggagaagc tctataacca ctttgtatct 7299  
 tacattgcac ctctaccaag aagctctgtt gtatttactt ggtaattctc tccaggtagg 7359  
 cttttcgtag cttacaaata tgttcttatt aatcctcatg atatggcctg cattaaaatt 7419  
 attttaatgg catatgttat gagaattaat gagataaaat ctgaaaagtg tttgagcctc 7479  
 ttgtaggaaa aagctagtta cagcaaaatg ttctcacatc ttataagttt atataaagat 7539  
 tctcctttag aaatgggtgtg agagagaaac agagagagat agggagagaa gtgtgaaaga 7599  
 atctgaagaa aaggagtttc atccagtgtg gactgtaagc tttacgacac atgatggaaa 7659  
 gagttctgac ttcagtaagc attgggagga catgctagaa gaaaaaggaa gaagagtttc 7719  
 cataatgcag acagggtcag tgagaaatc attcaggtcc tcaccagtag ttaaatgact 7779



gtatagtott gcactaccct aaaaaacttc aagtatctga aaccggggca acagatttta 7839  
 ggagaccaac gtctttgaga gctgattgct tttgcttatg caaagagtaa acttttatgt 7899  
 tttgagcaaa ccaaaagtat tctttgaacg tataattagc cctgaagccg aaagaaaaga 7959  
 gaaaatcaga gaccgttaga attggaagca accaaattcc ctattttata aatgaggaca 8019  
 ttttaacca gaaagatgaa ccgatttggc ttagggctca cagatactaa gtgactcatg 8079  
 tcattaatag aaatgttagt tectccctct taggtttgta ccctagctta ttactgaaat 8139  
 attctctagg ctgtgtgtct ccttttagttc ctgcacctca tgtctttgag ttttcagata 8199  
 tectctcat ggaggttagt ctctggtgct atgtgtattc tttaaaggct agttacggca 8259  
 attaacttat caactagcgc ctactaatga aactttgtat taciaagtag ctaacttgaa 8319  
 tactttcctt tttttctgaa atgttatggt ggtaatttct caaacttttt cttagaaaac 8379  
 tgagagtgat gtgtcttatt ttctactgtt aattttcaaa attaggagct tcttccaaag 8439  
 ttttgttgga tgccaaaaat atatagcata ttatcttatt ataacaaaaa atatttatct 8499  
 cagttcttag aaataaatgg tgtcacttaa ctccctctca aaagaaaagg ttatcattga 8559  
 aatataatta tgaaattctg caagaacctt ttgcctcacg cttgttttat gatggcattg 8619  
 gatgaatata aatgatgtga acacttatct gggcttttgc tttatgca gat att gac 8676  
 ctc tgt gaa aac agc gtg cag cgg cac att gga cat gct aac ctc acc 8724  
 ttc gag cag ctt cgt agc ttg atg gaa agc tta ccg gga aag aaa gtg 8772  
 gga gca gaa gac att gaa aaa aca ata aag gca tgc aaa ccc agt gac 8820  
 cag atc ctg aag ctg ctc agt ttg tgg cga ata aaa aat ggc gac caa 8868  
 gac acc ttg aag ggc cta atg cac gca cta aag cac tca aag acg tac 8916  
 cac ttt ccc aaa act gtc act cag agt cta aag aag acc atc agg ttc 8964  
 ctt cac agc ttc aca atg tac aaa ttg tat cag aag tta ttt tta gaa 9012  
 atg ata ggt aac cag gtc caa tca gta aaa ata agc tgc tta 9054  
 taactggaaa tggccattga gctgtttcct cacaattggc gagatcccat ggatgagtaa 9114  
 actgtttctc aggcaattga ggctttcagt gatattcttc tcattaccag tgactaattt 9174  
 tgccacaggg tactaaaaga aactatgatg tggagaaagg actaacatct cctccaataa 9234  
 accccaaatg gttaatccaa ctgtcagatc tggatcggtta tctactgact atattttccc 9294

B1  
 Cont

ttattactgc ttgcagtaat tcaactggaa attaaaaaaa aaaaactaga ctccactggg 9354  
 cettactaaa tatgggaatg tctaacttaa atagctttgg gattccagct atgctagagg 9414  
 cttttattag aaagccatat ttttttctgt aaaagttact aatatatctg taacactatt 9474  
 acagtattgc tatttatatt cattcagata taagatttgg acatattatc atcctataaa 9534  
 gaaacggtat gacttaattt tagaaagaaa attatattct gtttattatg acaaataaaa 9594  
 gagaaaatat atatttttaa tggaaagttt gtagcatttt tctaataagg actgccatat 9654  
 ttttctgtgt ggagtatttt tataatttta tctgtataag ctgtaatatc attttataga 9714  
 aaatgcatta tttagtcaat tgtttaatgt tggaaaacat atgaaatata aattatctga 9774  
 atattagatg ctctgagaaa ttgaatgtac cttattttaa agattttatg gttttataac 9834  
 tatataaatg acattattaa agttttcaaa ttatttttta ttgctttctc tgttgctttt 9894  
 attt 9898

<210> 3  
 <211> 401  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <223> Amino acids 1 to 21 correspond to positions -21 to  
 -1 of the OCIF protein. Amino acids 22 to 401  
 correspond to positions 1 to 380 of the OCIF  
 protein.

<400> 3  
 Met Asn Asn Leu Leu Cys Cys Ala Leu Val Phe Leu Asp Ile Ser Ile  
 1 5 10 15  
 Lys Trp Thr Thr Gln Glu Thr Phe Pro Pro Lys Tyr Leu His Tyr Asp  
 20 25 30  
 Glu Glu Thr Ser His Gln Leu Leu Cys Asp Lys Cys Pro Pro Gly Thr  
 35 40 45  
 Tyr Leu Lys Gln His Cys Thr Ala Lys Trp Lys Thr Val Cys Ala Pro  
 50 55 60  
 Cys Pro Asp His Tyr Tyr Thr Asp Ser Trp His Thr Ser Asp Glu Cys  
 65 70 75 80  
 Leu Tyr Cys Ser Pro Val Cys Lys Glu Leu Gln Tyr Val Lys Gln Glu  
 85 90 95

Cys Asn Arg Thr His Asn Arg Val Cys Glu Cys Lys Glu Gly Arg Tyr  
 100 105 110  
 Leu Glu Ile Glu Phe Cys Leu Lys His Arg Ser Cys Pro Pro Gly Phe  
 115 120 125  
 Gly Val Val Gln Ala Gly Thr Pro Glu Arg Asn Thr Val Cys Lys Arg  
 130 135 140  
 Cys Pro Asp Gly Phe Phe Ser Asn Glu Thr Ser Ser Lys Ala Pro Cys  
 145 150 155 160  
 Arg Lys His Thr Asn Cys Ser Val Phe Gly Leu Leu Leu Thr Gln Lys  
 165 170 175  
 Gly Asn Ala Thr His Asp Asn Ile Cys Ser Gly Asn Ser Glu Ser Thr  
 180 185 190  
 Gln Lys Cys Gly Ile Asp Val Thr Leu Cys Glu Glu Ala Phe Phe Arg  
 195 200 205  
 Phe Ala Val Pro Thr Lys Phe Thr Pro Asn Trp Leu Ser Val Leu Val  
 210 215 220  
 Asp Asn Leu Pro Gly Thr Lys Val Asn Ala Glu Ser Val Glu Arg Ile  
 225 230 235 240  
 Lys Arg Gln His Ser Ser Gln Glu Gln Thr Phe Gln Leu Leu Lys Leu  
 245 250 255  
 Trp Lys His Gln Asn Lys Asp Gln Asp Ile Val Lys Lys Ile Ile Gln  
 260 265 270  
 Asp Ile Asp Leu Cys Glu Asn Ser Val Gln Arg His Ile Gly His Ala  
 275 280 285  
 Asn Leu Thr Phe Glu Gln Leu Arg Ser Leu Met Glu Ser Leu Pro Gly  
 290 295 300  
 Lys Lys Val Gly Ala Glu Asp Ile Glu Lys Thr Ile Lys Ala Cys Lys  
 305 310 315 320  
 Pro Ser Asp Gln Ile Leu Lys Leu Leu Ser Leu Trp Arg Ile Lys Asn  
 325 330 335  
 Gly Asp Gln Asp Thr Leu Lys Gly Leu Met His Ala Leu Lys His Ser  
 340 345 350  
 Lys Thr Tyr His Phe Pro Lys Thr Val Thr Gln Ser Leu Lys Lys Thr  
 355 360 365  
 Ile Arg Phe Leu His Ser Phe Thr Met Tyr Lys Leu Tyr Gln Lys Leu  
 370 375 380

B1  
 cont.

Phe Leu Glu Met Ile Gly Asn Gln Val Gln Ser Val Lys Ile Ser Cys  
 385 390 395 400

Leu

<210> 4  
 <211> 1206  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <223> cDNA

<400> 4  
 atgaacaact tgctgtgctg cgcgctcgtg tttctggaca tctccattaa gtggaccacc 60  
 caggaaacgt ttcttccaaa gtaccttcat tatgacgaag aaacctctca tcagctgttg 120  
 tgtgacaaat gtctctctgg tacctacctt aaacaacact gtacagcaaa gtggaagacc 180  
 gtgtgcgccc cttgccttga ccactactac acagacagct ggcacaccag tgacgagtgt 240  
 ctatactgca gcccctgttg caaggagctg cagtacgtca agcaggagtgt caatcgcacc 300  
 cacaaccgctg tgtgcgaatg caaggaaggg cgctaccttg agatagagtt ctgcttgaaa 360  
 cataggagct gccctctctg atttgagtg gtgcaagctg gaacccaga gcgaaataca 420  
 gtttgcaaaa gatgtccaga tgggttcttc tcaaatgaga cgtcatctaa agcaccctgt 480  
 agaaaacaca caaattgcag tgtctttggt ctctgtctaa ctcagaaagg aaatgcaaca 540  
 cactgacaaca tatgttccgg aaacagtga tcaactcaaa aatgtggaat agatgttacc 600  
 ctgtgtgagg aggcattctt caggtttgct gttcttcaaa agtttacgcc taactggctt 660  
 agtgtcttgg tagacaattt gcctggcacc aaagtaaacy cagagagtgt agagaggata 720  
 aaacggcaac acagctcaca agaacagact ttccagctgc tgaagttatg gaaacatcaa 780  
 aacaagacc aagatatagt caagaagatc atccaagata ttgacctctg tgaaaacagc 840  
 gtgcagcggc acattggaca tgctaacctc accttcgagc agcttcgtag cttgatggaa 900  
 agcttaccgg gaaagaaagt gggagcagaa gacattgaaa aaacaataaa ggcattgcaa 960  
 cccagtgacc agatcctgaa gctgctcagt ttgtggcgaa taaaaaatgg cgaccaagac 1020  
 accttgagg gcctaattgca cgcactaaag cactcaaaga cgtaccactt tcccaaaact 1080  
 gtcactcaga gtctaaagaa gaccatcagg ttcttccaca gcttcacaat gtacaaattg 1140

B1  
 cont.

tatcagaagt tattttttaga aatgataggt aaccagggtcc aatcagtaaa aataagctgc 1200

P1  
cont

ttataa

1206

